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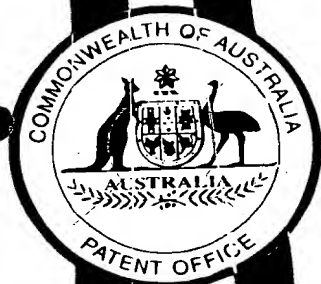
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I, ANNA MAIJA EVERETT, ACTING TEAM LEADER EXAMINATION  
SUPPORT & SALES hereby certify that annexed is a true copy of the  
Provisional specification in connection with Application No. PQ 1374 for a  
patent by TECHVILLE PTY LTD. filed on 05 July 1999.

WITNESS my hand this  
Fourteenth day of July 2000

*A. M. Everett.*

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# TECHVILLE PTY LTD

ACN 069957400

## PROVISIONAL PATENT SPECIFICATIONS

ENTITLED: save the planet

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Abstract: A method of creating solid alum salts in a liquid dispensing container so that precise doses of alum salts may interface with a liquid carrier ; Forming useful commercial products with a far superior life span in the medicinal and personal care industries . central to the invention is being able to form products that last up to 10 times longer than other products resulting in millions of tons less plastic wastage in the environment.

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## **Background art :**

Alum is an inorganic compound and generally contains two metals two sulphate groups and water. A compound of this type is called a hydrated Double salt. Alum's are hydrated double salts. That have similar compositions and similar crystalline structures.

Alum's have a variety of uses. For instance Alum's have been used in the dying industry , for water purification, for paper sizing, for fire proofing fabrics, in fire extinguishers, and in medicinal and cosmetics fields.

It is the medicinal and cosmetics fields where alum's have particular interest. For instance alum has astringent properties, and is used in medicine to treat certain skin conditions, to reduce excessive perspiration, and to stop bleeding from small cuts. dilute solutions (1-4%) have been used as mouth washes and gargles. solutions of 5-10 % are used to harden the skin. especially of the feet Strong aqueous solutions of alum are used as styptic for minor cuts and abrasions. Recent applications of alum containing solutions include bladder irrigation's for haemorrhaging. Alum is an important chemical compound with great benefits across a broad spectrum of issues to mankind.

commercially the two most important alum's are potassium alum and ammonium alum. Ammonium alum is manufactured by Crystallization from an aqueous solution of ammonium sulphate and aluminum sulphate. Ammonium alum crystals are also produced by treating a mixture of aluminum sulphate and sulfuric acid with ammonia. Potassium alum occurs naturally in the minerals alunite and kalinite.

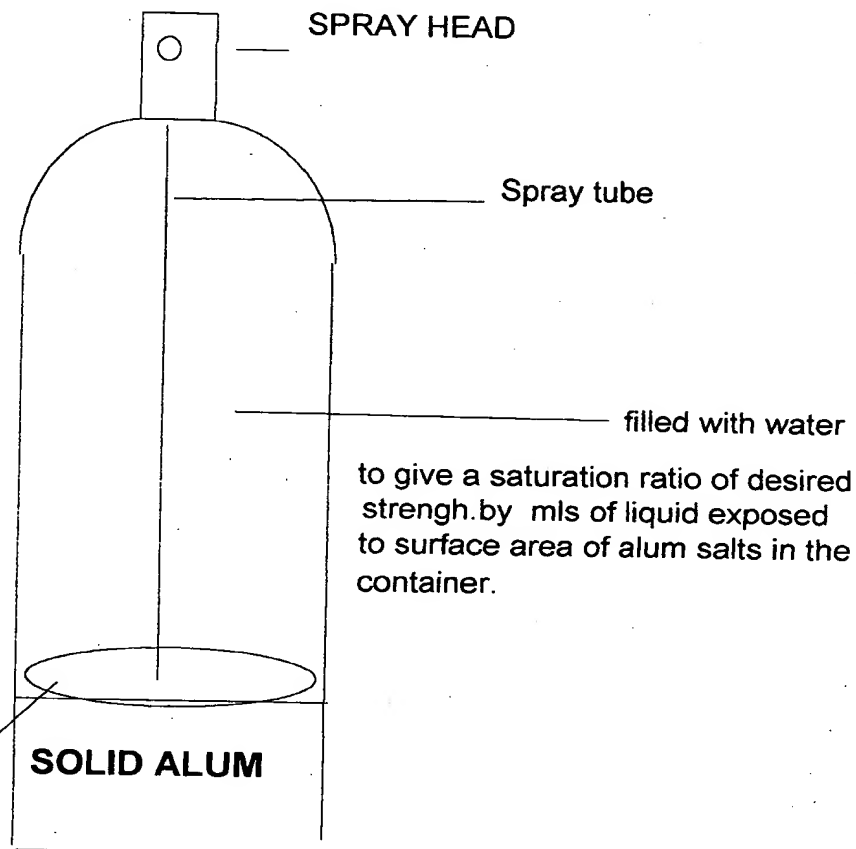
It is known that alum's , and especially potassium and ammonium alum can be used as a deodorant for human use in liquid form. liquid The alum salts are highly dissolvable in water. To make an effective solution , 5-10 % by volume weight of alum may be added. If too much of the alum salts are added to a liquid medium it results in an over saturation of suspended salts which presents the following problems. pump spray bottles become blocked and clogged with salt crystals in the spray head and the pump spray tube. spray dispensers are quickly used by consumers and the plastic packaging is then subsequently discarded , a majority of these deodorant spray pumps end up in land fill or as pollution in the environment for thousands of years.

## **OBJECT OF THE INVENTION**

It is the object of the invention to create an end product that lasts up to twenty times longer as a deodorant or medicinal product than what is currently achievable because of the alum's saturation problems as afore described. efforts to achieve this result have failed until the discovery of technology to create a method of controlled alum release into a liquid medium.

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To overcome the suspension saturation problem it has been discovered that the solid alum salts solution strength and rate may be controlled by direct volumetric exposure to a liquid in a dispensing container. The following diagram is used to highlight the method.



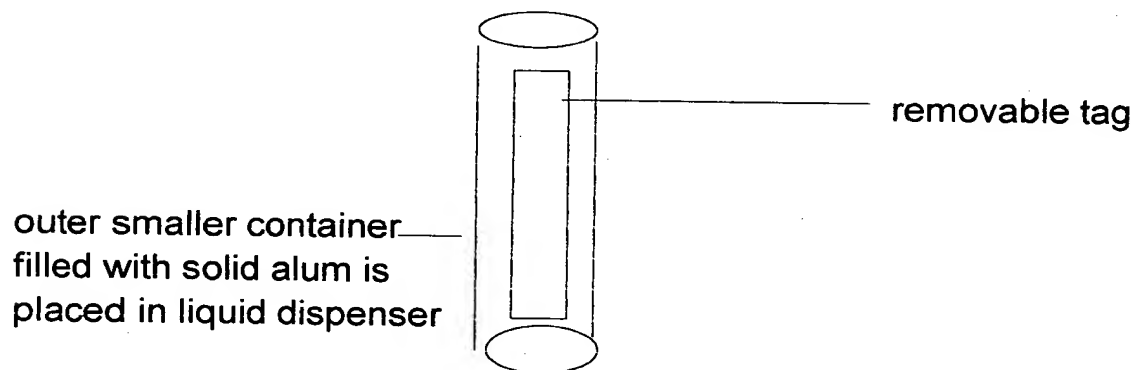
Surface area of alum exposed to liquid determines strength in measured dose by pre determined mathematical equation.

When the container is empty, the consumer simply re fills it with more water. This instantly makes more liquid alum solution in the desired saturation range and suitable for a variety of medical and cosmetic uses. The technology developed to control the solubility and interaction of the liquid on the solid alum is by forming / moulding a solid alum crystal in the container where by only the face of the alum is exposed to the liquid.

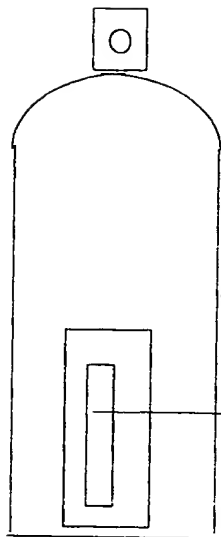
in the above diagram the sides and bottom of the alum are not exposed to the liquid because the alum has formed a water tight seal and will only be dissolved on a one dimensional basis.

The method of creating alum so that its solubility and life span may be controlled is to heat the alum so that it melts into liquid or substantially liquid and then poured into a pre determined liquid dispensing container. The hot liquid alum solidifies upon cooling forming a three dimensional shape with one face exposed to form a saturated solution when water is added.

Alternatively another method forming controlled alum dispersion is via the following diagram. Heated liquid alum may be poured and solidified into a core devise which is dropped into a spray or liquid dispensing container. The shape and size of this dispensing devise may be altered taking into account the desired saturation result required. I.e. it may be cylindrical in pyramid form , oval or other design as long as the exposed alum's give the result.

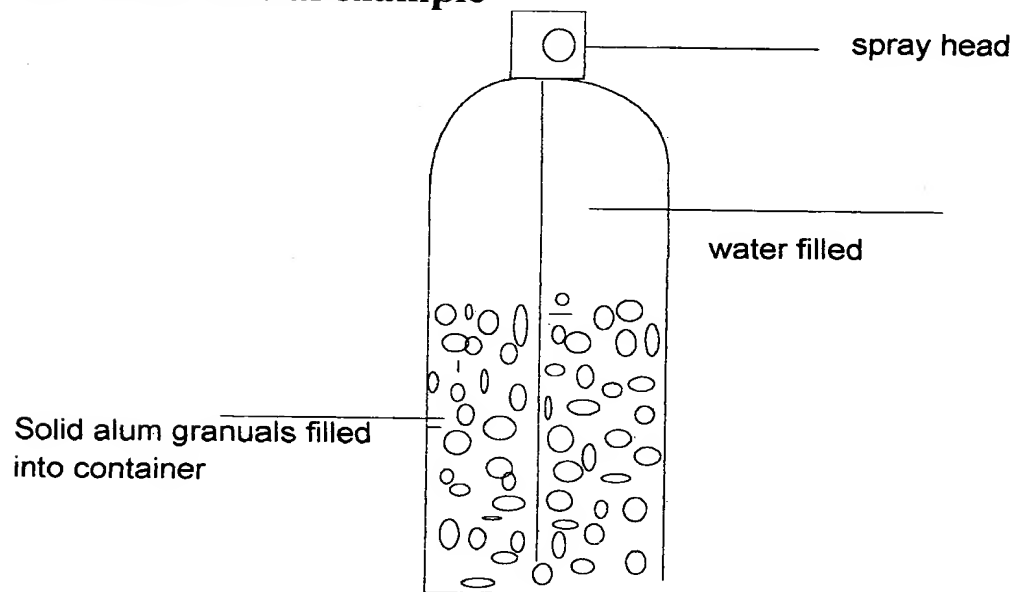


When the tag is removed this exposes a pre determined amount of surface area alum that liquids may come into contact with forming the desired saturated solutions and creating a long life refillable product



Controlled dispensing device placed into liquid dispensing container giving continuous saturated solution via surface area exposure of alum to liquids.

### Non Commercial example



**The preceding diagram is a non commercial devise.**

The combined surface area of the alum granules interacting with the liquid results in super saturated solution that will block and clog the spray pump head and tube.

It can be seen from the preceding pages and diagrams that useful and long lasting commercial products may be created . It should be appreciated that various other changes may be made to the embodiments described but which are within the scope of claims to produce measured dose alum saturated liquids that are refillable by consumers .

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